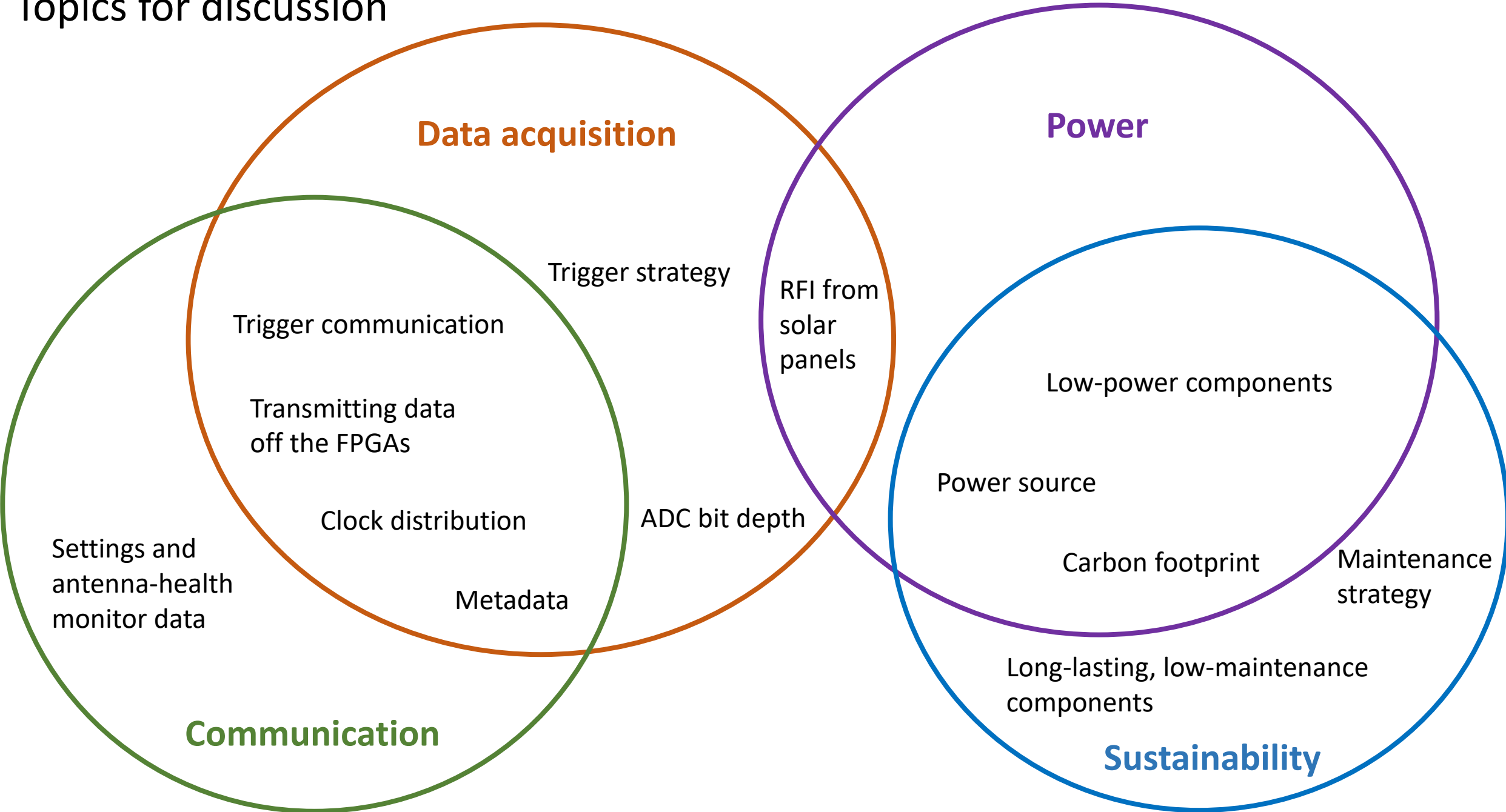


DAQ for very large-scale  
detectors; Sustainability;  
Optimizing power and comms  
distribution

# Topics for discussion



# Question list to start the discussion

1. What structure (i.e. how many levels) should we choose for the trigger?
2. **What trigger strategy makes an efficient and pure trigger for large arrays?**
3. **When signals from some antennas meet the trigger condition, should this result in data acquisition from additional antennas which may have sub-threshold signals? If so, what are the best ways to quickly communicate the trigger?**
4. **What information should be saved for each trigger? What length timeseries? Which meta-data?**
5. What are technical solutions for collecting and managing monitor data for very large arrays? How should settings and control information be managed across large arrays?
6. Should signals from groups of antennas be digitized at central locations, or at each antenna separately?
7. ADCs: How many bits optimize the tradeoff between data rate and dynamic range?
8. **Clock distribution: What are good strategies for distributing clocks to all the ADCs? What are good strategies for synchronizing the FPGAs? What systematic and statistical uncertainties in relative timing between antennas are tolerable?**
9. How should data be transmitted off the FPGAs?
10. Will solar panels near the antennas create RFI that needs to be mitigated?
11. **How can large arrays minimize power consumption?**
12. **How can large arrays minimize component failures?**
13. **What strategies keep maintenance requirements manageable for thousands of antennas?**
14. How should we power our data processing and storage?
15. **What are good sustainability goals for future large arrays? What is acceptable? (e.g. net zero carbon emissions, setting an example that others will follow, something else?)**
16. What are past and present collaborations trying that is working to improve sustainability of astroparticle physics?
17. What overall topics must be considered to make a sustainable experiment? (Carbon footprint, hardware lifecycle, ...?)